INTERNATIONAL BULLETIN OF PLANT PROTECTION

1933 No. 9

DISCOVERIES AND CURRENT EVENTS *

Algeria: *Amphiestris baetica* (1).

Numerous adult specimens of *Amphiestris baetica*, Ramb. have been reported in the course of June 1933 among the crops in the communes of Dra-el-Mizan, Tizi-Reniff and Palestro.

Algeria: The Moroccan Locust (*Dociostaurus maroccanus*) (2).

Adult specimens have been reported in the course of June 1933 in the douars Aïourn-el-Beranis, Hussasnas Cheraga and Hounet (Saïda), as well as in the douar Gosbate (Barika).

Angola: Movements of the Red Locust (*Nomadacris septemfasciata*) and Tropical Migratory Locust (*Locusta migratoria migratorioides*) (3).

In 1932 locusts have been reported for the first time on 12 March in the frontier district of Cuando, district of Bié near the frontier of Northern Rhodesia. Large swarms of *Nomadacris septemfasciata* and of *Locusta migratoria migratorioides* began to pass over this region about the middle of February, mainly by the station of Séde between the rivers Lomba and Cuando ; nothing is known of their origin and after their appearance flight seemed to take all directions.

On 4 April the first swarms made their appearance at Lutango (Sá da Bandeira) and at Jau, district of Huila. On 8 April a swarm of 2 km in length settled at Mulola do Ontite, between Humpata and Chibia, district of Huila, then taking flight towards the North. The damage done was very considerable and the plague was combatted by means of flame-throwers, using petrol as the fuel. A swarm covering 10 square kilometres made its appearance on 26 April at Tampa and Brusco, district of Mossamedes and flew towards Serra da Chela.

* Under this and the next heading the countries are arranged in French alphabetical order.

(1) Communication from the Government General of Algeria (Direction des Services Economiques) to the International Institute of Agriculture.

(2) Communication from the Government General of Algeria (Direction des Services Economiques) to the International Institute of Agriculture.

(3) Communication from the Director of the Laboratory of Plant Pathology, Luanda, Angola, transmitted to the International Institute of Agriculture by the Direction General of Agricultural Services, Ministry of Agriculture, Lisbon, Portugal.

On 20 and 30 of April the circumscription of Quilengues, district of Benguela experienced two large invasions which destroyed nearly all the crops. Nothing is known as to the origin of these two swarms or the direction taken by them.

At the beginning of May an invasion took place at Lola and at Camecuio, district of Mossamedes and has occasioned very considerable damage. Flame-throwers were employed.

No communication was received during the month of June by the Department of Agricultural Services in relation to the movements of locusts in the Colony.

On 3 July a swarm passed over Duque de Bragança, district of Malange, flying East and West. On 17 July another swarm passed following the same direction. On 24 July there was observed on the Agricultural Station of Bié (18 km north of Silva Porto, district of Bié) a dense swarm flying from the East to the West. As a control measure tar was employed with satisfactory results. During the month on several occasions various swarms settled at Quibala, district of Quanza-Sul. Nothing is known as to the origin of the swarms or the direction taken by them. Serious damage has been done to crops.

In Portugalia, headquarters of the frontier district of Chibato, near the Belgian Congo on 7 September at 11 a. m. a swarm of *Nomadacris* passed over, flying in the direction N. E. to S. W.

On 9 October a swarm of very great density was noted above the civil station of Camenongue (Vila Luzo) flying towards the N. E. On 10 October during two hours there passed over Vila de Serpa Pinto, circumscription of Menongue, a very large swarm flying N. E. to S. W. On 12 October, for six consecutive hours, another large swarm passed over the same locality flying towards the N.

On 2 November there passed over the civil station of Jau and Vila de Chibia, district of Huila two very large swarms coming from the S. and flying N. It is conjectured that these locusts were the outcome of the last oviposition effected in the mountain chain of Chela. At Quibala, district of Quanza-Sul, the passage of destructive large swarms was continuously reported ; the result was great discouragement among the cultivators who saw their crops constantly threatened. On 17 November two swarms passed over the civil post of Jau, district of Huila, coming from the S. ; one of these took a south-easterly direction devouring en route large quantities of maize ; the other went towards the N. On 28 November another swarm again passed by Jau; it caused considerable damage. On 4 November another swarm of *Nomadacris* flying from East to West passed over Vila Arriaga. This swarm which came from the Huila district took three hours to pass, it again moved towards the district referred to. In the district of Mossamedes hopper bands made their appearance. The region of Chela, district of Mossamedes, was invaded on 26 November by a swarm which destroyed all the native grown crops recently sown. On 22 November the region of Malange was devastated and the locusts settled in the valley of Cassange destroying the crops and were believed to have laid there.

During December no information was received as to the movements of locusts.

Australia: Success in Control of Bunchy Top Disease of Bananas in New South Wales (1).

Production of bananas in New South Wales in 1913 amounted to 31,047 bushels, and slight annual increases in production were recorded up to 1917. Rapid expansion of the industry occurred during the years 1918-1922 and peak production of 650,300 bushels was reached in 1922. At this time 4,570 acres were in bearing and 898 acres were not yet bearing. As a result of rapid spread of the Bunchy Top disease, the industry then declined rapidly, and in 1925 only 91,144 bushels were produced ; 1,002 acres were then in bearing and 502 acres carried young plants.

Bunchy Top was known to have existed in New South Wales prior to 1913, but its nature was unknown until the investigation of 1924-25 demonstrated that it was caused by a virus.

A series of regulatory measures was drawn up by the New South Wales Department of Agriculture in 1927 by virtue of the powers contained in the N. S. W. Plant Disease Act (1924). Quarantine areas were declared, eradication of diseased plants was enforced and movement of suckers was allowed only under permit after certification for freedom from diseases and pests.

The industry is now rehabilitated, production figures gradually improved during the years 1927-1930 and rapid development has occurred since that time. The lates official figures available are those for the 12 months ending June, 1932, when 515,140 bushels were produced, 4,733 acres were then in bearing and 2,394 acres carried young plants.

Eritrea: Locusts (2).

There were reported at the beginning of July 1933, between the Gasc and the Setit, and especially near Ducambia, swarms of locusts of a species not yet identified, coming from Abyssinia, and flying towards Barentu.

There is no special report from the Anglo-Egyptian Sudan.

United States of America: Disappearance of *Zostera marina* along the Atlantic Coast of North America (3).

The widespread destruction of *Zostera marina*, the common 'eel grass', along much of the Atlantic Coast of North America constitutes one of the outstanding biological phenomena of the past year. As recorded by field observers this plant which, until recent years, was abundant in shallow salt water from

(1) Communication from the official correspondent of the Institute, Mr. R. J. NOBLE, Ph. D., M. Sc., B. Sc. Agr., Biologist, Department of Agriculture, Sydney, New South Wales, Australia.

(2) Communication from the Government of Eritrea, transmitted to the International Institute of Agriculture, by the Italian Ministry of the Colonies (Bureau of Enquiry and Propaganda).

(3) Communication from the official correspondent of the Institute, Dr. Neil E. STEVENS, Senior Pathologist, Plant Disease Survey, Bureau of Plant Industry, United States Department of Agriculture, Washington.

North Carolina to Nova Scotia and Prince Edward's Island has almost completely disappeared throughout a large part of its range.

Systematic field observations have been made chiefly by investigators of the Biological Survey of the United States and the Biological Board of Canada because *Z. marina* constitutes under normal conditions more than 80 per cent of the winter food of sea brant, an important game bird. Zostera is to a less extent also the winter food of other important game birds. Some additional notes are being made by other biologists interested in marine problems.

All observers agree that great areas extending all the way from Beaufort, North Carolina, to Nova Scotia, in which Zostera was abundant during earlier years, were almost denuded the summer of 1932. In many of these areas, but by no means all, there was a marked diminution in 1931, and there was some evidence of local decline as early as 1930. Throughout this affected area, from Beaufort, North Carolina, to the Gulf of St. Lawrence, there are localities such as estuaries and the mouths of some of the rivers, in which the sea water is markedly diluted by fresh water, where there still exist dense stands of apparently normal and healthy eel grass. Upper Chesapeake Bay, south of Baltimore and Annapolis, is an example. All reports indicate a normal healthy condition of eel grass on the Pacific Coast.

A survey by Mr. Clarence Cottam in the early spring of 1933 disclosed areas where *Z. marina* had died out almost completely but which now showed a good stand of seedlings, with practically no mature plants. Great Bay and Grassy Bay, New Jersey, are examples of this. Some of the places he found showed new growths of 5 to 25 seedlings to the square yard. Along the coastal area of Pamlico Sound, particularly near the mouths of the rivers, the eel grass showed a decided improvement over conditions there in December, 1932.

A still more recent survey (June, 1933) of some of these areas, however, by Mr. Cottam indicates that the adverse factors are still operative as certain of the areas in which the stand appeared to be improving in early spring are again almost denuded of plants.

Great interest is added to this whole problem by the fact that an apparently similar condition has been observed in Europe along the Atlantic Coast of France and the Netherlands (1932). The French authors report the presence of numerous rod shaped bacteria in the leaves and rhizomes of affected plants. Various organisms have also been isolated by American investigators, but as yet no one organism appears to dominate and no evidence has been obtained of any parasitism.

Morocco (French Zone): The Desert Locust (*Schistocerca gregaria*) (1).

1 May 1933. — A swarm coming from the W. settled at Kashbah Bougriben 15 km S. W. of Berkane.

A swarm settled at Aïn-Oulad Messaoud (region of Oudjda) and laid. It departed on 3 May, separating into three swarms which flew towards Debdou, El-Aïoun and Berguent.

(1) Communication from the Government General of Algeria (Direction des Services Economiques) to the International Institute of Agriculture.

Hatching reported at M'Daouer Zireg and Dat Haddouch (region of Taza) of eggs laid on 8 and 9 April.

A swarm coming from the S. settled at Aïn-Taghellahel (region of Oudjda) and laid over 30 hectares. It departed on 3 May towards the N. and settled at Mehenniz.

2 May 1933. — A swarm settled near Sidi-Moussa (region of Oudjda) and laid.

A swarm settled at Djebel Darf (region of Oudjda).

A yellow swarm, coming from the N. (Spanish Morocco), settled near Sakka (region of Taza).

3 May 1933. — A swarm settled near Kasbah Bougricha, between Berkane and Melilla.

4 May 1933. — A swarm settled 4 km N. of Kasbah Bougricha and laid.

A swarm settled on the banks of the Moulouya, near Mechral and Mellah.

Hatching reported at Defira, on the banks of the Oued Gueddal, at Batma el Djamaa and at Guerbour el Youd (S. E. of El-Aïoun).

Hatching reported in the plain of Angad (Contrôle of Berkane).

A yellow swarm of 5 × 4 km coming from the E. settled at Betteina, near Guercif.

Abundant hatching from 4 to 11 May throughout the, bureau, of Sakka, notably at Nekhila, Oussa and Oulad Hannaoui.

6 May 1933. — Laying reported over 150 hectares W. of Djebel Darf.

Hatching reported at Sidi Ali Moussa, Oued El Assas and at Tanebdourt (Annexe of El-Aïoun).

Laying reported at Tamsaunt (Contrôle of Guercif) over 60 hectares.

7 May 1933. — A swarm coming from the S. E. settled at El-Oumal (W. of Taza) and afterwards flew towards the S.

A swarm coming from the S. S. W. settled at El-Oumal (W. of Taza).

8 May 1933. — A swarm settled S. of El-Aïoun, covering 900 hectares.

9 May 1933. — A yellow swarm settled at 5 p. m. at El-Ordjaune (N. W. of Outat el Hadj).

Dense laying (23 herds) reported from 9 to 11 May in the region of Taza.

A yellow swarm coming from the E. settled at Sahab Touil (N. W. of Taza) and afterwards flew towards the S.

10 May 1933. — Hatching reported at Thaat Hamar and Tafrout (Annexe of El-Aïoun).

General hatching in the region of Oudjda over 930 hectares.

Swarms from the N. and N. W. settled on 10 and 11 May at the W. of Taza.

11 May 1933. — Hatching reported from 11 to 18 May at Hassi, Aïn-Kikeb and Bou-Kabane (region of Mesguittem).

Hopper bands reported from 11 to 18 May in the region of Sakka.

12 May 1933. — A yellow swarm 8 × 2 km, coming from the S. E., settled at Bab Guerraoua (region of Fez) and afterwards flew towards the N. E.

A yellow swarm 3 × 2 km passed Caïd Khiat (region of Fez) going towards the N. W.

Egg-laying reported near the track from Debdou to Berguent over 1 hectare.

Hatching reported S. E. of Djebel Harraza (over 20 hectares) to Oued Isly (over 10 hectares), to Djebel M'gheris (over 100 hectares), and to the Azencot farm (over 300 hectares), in the region of Oudjda.

A swarm, coming from the region of Taze, passed Aïn-Mediouna and settled on 13 May at Beni-Oulid (region of Fez).

Various swarms, not very dense, coming from the S. W. settled on 12 and 13 May at El-Hadjeb (region of Meknès).

13 May 1933. — Hatching reported at Tamsaunt over 60 hectares, and Fedhge M'Soum over 200 hectares (region of Guercif).

Swarms coming from Ghiatta settled near Sahab Touil, Ouled Abdel-Krim, Ouled el Aroussi and Ouled Soltane (region of Fez).

14 May 1933. — A swarm coming from the S. settled S. of Meknès and laid over 1 hectare.

15 May 1933. — A swarm coming from the E. settled near the road from Fez to Meknès.

A yellow swarm of 3 × 2 km, coming from the S. W. settled at Djebel-Saïd (S. of El-Aïoun).

Egg-laying reported over 1 hectare near Gara Soltana (W. of Berguent).

Hatching reported at Mafen Bidi Tahar over 25 hectares, S. W. of Djebel Saïd over 80 hectares, and at Oued Metron over 30 hectares (region of Metroh).

A yellow swarm, coming from the N. (Spanish Zone) settled at the Douar El-Hadjat (50 km N. W. of Taza) and afterwards flew towards the W.

A swarm coming from Bab Guerraoua settled at the Ouled Aliane (region of Fez).

16 May 1933. — Egg-laying reported at Chabet Kaddoun (W. of Berguent) over 1 hectare.

Hatching reported W. of the coast 865 (region of Oudjda) over 150 hectares.

17 May 1933. — Swarms of slight density settled on the environs of Sefrou (region of Fez).

Hatching reported 7 points N. of Oudjda.

Hopper bands coming from the N. W. reported on the Taza road, between 12 and 30 km from Taza.

18 May 1933. — Hopper bands of 3 × 0,600 km, coming from Zereg, reported at Mestigmeur (region of Oudjda) going towards the E.

A hopper band of 5 × 1 km coming from Oued el Guedda and Oued el Assla reported at Sidi-Ali-Moussa.

Hatching reported at Nkehila (control of Guercif) over 100 hectares.

A swarm coming from the S. E. settled N. of Moulay Aïn-Djenane (region of Fez).

19 May 1933. — Considerable hatching reported in the Haddyines (region of Oudjda) over 550 hectares.

Large hopper bands reported towards Oued Messiine and between Mestigmeur and Sidi Yakoub (region of Oudjda).

20 May 1933. — Hatching reported 15 km S. W. of Berkane.

22 May 1933. — Hatching reported S. of Bou-Ladjeraf (region of Taza), of eggs laid on 9 May.

New hatching reported at Guerrouaou and at Sidi-Brahim (region of Taza).

Many yellow swarms observed circling between Tazzougert and Atchar on one side and Kerrando and Guarrouna on the other (Algerian-Morocco confines).

Hatching reported W. of Sidi-Moussa (region of Oudjda).

Hopper bands reported coming from Sidi-Mimoun and Cherga (region of Oudjd) towards the S. W.

24 May 1933. — Laying reported at Bled el Hammam (E. of Meknès) over 25 hectares.

Hatching reported at Oued-Bou-Redim and W. and S. W. of El-Aïoun (region of Oudjda).

Hopper bands reported towards Rich, Hammam, Batna, Djemaa and Djorf el Yandi (region of Oudjda).

Hatching reported at Hamra, Djebel Haraza and at Djorf and Baroud (near Oudjda) over 90 hectares.

Considerable hatching from 24 to 28 May in the environs of Taza.

Large hopper bands coming from Sakka and travelling towards Guercif.

26 May 1933. — Laying reported at Aït Sebaa and Aït Seghrouchen (near Sefrou) over 50 hectares.

Egg-laying reported in the environs of El-Hadjeb (region of Meknès) over 49 hectares.

Egg-laying reported at Aït Sebaa and Aït Segrouchen (region of Fez) over 50 hectares.

28 May 1933. — Hatching reported at Djebel Saïd (Annexe of El-Aïoun), over 20 hectares, of eggs laid on 1 May.

Hatching reported at Taghellaleb (El-Aïoun) over 50 hectares.

31 May 1933. — Many hopper bands came over the Moulouya, between Moulay el Bacha and Mechra Sfa, invaded Beni Mahou, and descended the Moulouya in a N. E. direction (region of Oudjda).

1 June 1933. — Large hopper bands, coming from the S., reported from the Moulouya to the Algerian frontier in the limit of Berkane, travelling N.

2 June 1933. — Large hopper bands reported at El-Ghassen (region of Oudjda).

3 June 1933. — Hatching reported at El-Hammam (region of Meknès) from eggs dating from 15-20 May.

6 June 1933. — Hatching reported at Sahab Touil and Ben Guerraoua (region of Fez).

7 June 1933. — Hatching reported at Chabet Kaddour and Gara Soltana (region of Berguent) from eggs dating from 15 May.

12 June 1933. — Hatching reported at Sidi-ali-ben-Brahim (N. of Fez), over an area of 3-4 hectares and near Sefrou (in Aït Seghrouchen) over an area of 600 hectares.

13 June 1933. — A pink swarm, coming from the N. W., settled partly at Tangerfi (region of Oudjda) and partly flew on S. E.

14 June 1933. — A pink swarm, coming from the W., settled at Mestigmeur (region of Oudjda) and left flying E.

15 June 1933. — Hopper bands continued to advance over El Ghassem (region of Oudjda).

Hatching reported at Sebaa Aïoun and Hadj Kaddour (region of Meknès).

16 June 1933. — A pink swarm, coming from the N., settled at Timezrai (circle of Missour-Taza).

A pink swarm, coming from the N., settled at Bou-Rached (circle of Missour-Taza), left flying S.

17 June 1933. — Pink swarms, coming from the N. and N. E., reported on June 18-19 at Mehiriz, at Tahzalet and over El-Aïoun (region of Oudjda).

18 June 1933. — A pink swarm, coming from the N. W., settled at Tsiouant (region of Taza).

Hatching reported at Gouiret el Fellas ,at Rasfett and Rabali (region of Oudjda).

23 June 1933. — An inconsiderable pink swarm, coming from the N., settled at Outat el Hadj (region of Taza) following the course of the Oued Moulouya.

24 June 1933. — A pink swarm, coming from the N. E., settled at Aïn-Abbou (region of Taza).

A pink swarm, coming from the N., settled at Bou-Rached (region of Taza) and left, flying S.

A pink swarm, covering an area of 15 × 4 kilometres, coming from the S. W., settled at Gourrama, flying N. W.

25 June 1933. — A pink swarm, covering an area of 5 × 5 kilometres, coming from the N. W., settled at Reggou (region of Taza).

26 June 1933. — A pink swarm, covering an area of 18 × 4 kilometres, coming from the E., settled near Gourrama.

27 June 1933. — A pink swarm, coming from the N. W., settled at Sahab el Rhar (region of Oudjda), flying S.

A large pink swarm, coming from the N., settled at Guefat (region of Oudjda).

A pink swarm, coming from the S., settled at Oglat Cedra (region of Oudjda), flying N.

28 June 1933. — A pink swarm, covering an area of 4 × 2 kilometres, coming from the N., settled at Missour (region of Taza), flying S.

A pink swarm, covering an area of 5 × 2 kilometres, settled near Ksar es Souk.

29 June 1933. — A pink swarm, coming from the N., settled at Berguent (region of Oudjda).

30 June 1933. — A pink swarm, coming from the E., settled at Dar Caïd Madbioh (Haut M'Soum, region of Taza). Left on 1 July, flying W.

Southern Rhodesia: Locust Invasion, 1933 (1).

Monthly Report No. 7, June, 1933.

1. *Locusta migratoria migratorioides.*

No reports or specimens of the European Migratory locust have been received during the month.

Eggs laid in confinement and kept under natural conditions have not yet hatched.

2. *Nomadacris septemfasciata.*

Swarms of the Redwing locust are still in evidence in various parts of the colony. Their movements are not of a definitely migratory character but there is evidence of a westerly drift due apparently to the prevailing winds.

On the 16th an exceptionally large swarm is reported to have passed over part of the Lomagundi district in a N. N. W. direction. Apparently this swarm was flying very high, during a portion of the day, but no exact particulars could be secured.

No reports of serious damage to winter crops have been received and from direct observations the locusts do not seem to be feeding voraciously at present.

Individual fliers of this species have been observed in various localities apparently left behind by swarms.

The development of red coloration continues generally, although an exceptional individual is occasionally to be met with still retaining much of the coloration of the newly matured individuals. The pink suffusion at the base of the hindwing is now unmistakably developing in many smarms although still far short of full development.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

French West Africa (Ivory Coast). — A Decree of 7 April 1933 establishes the measures to be taken to protect from the coffee-berry borer [*Stephanodores hampei*] the circles which are still immune from this insect. (*Bulletin Mensuel de l'Agence Economique de l'Afrique Occidentale Française*, Paris, juin 1933, 14e année, nº 150, p. 185).

Germany (2). — By Decree of 11 June 1933 based on the Decrees of 3 November 1931 and of 20 April 1933 [see this *Bulletin*, 1932, No. 2, pp. 24-25, and 1933, No. 6, pp. 127-128] the measures intended to prevent the introduction of San José scale [*Aspidiotus perniciosus*] have been extended to consignments from Rumania.

(1) Communication from the official correspondent of the Institute, Mr. Rupert W. Jack, F.E.S., Chief Entomologist, Department of Agriculture, Salisbury, Southern Rhodesia.

(2) Communication from the Biologische Reichsanstalt für Land-und Forstwirtschaft, Berlin-Dahlem, official correspondent of the Institute.

The Decree enacts in addition that living plants and the green parts of living plants, fresh fruits and their residues coming from Bulgaria, Greece, Yugoslavia, Poland and Czechoslovakia cannot be imported except through the Customs Offices, a list of which is appended to the present Decree, and on condition that an inspection made at the time of entrance, at the expense of the party interested, has not revealed the presence or the suspected presence of San José scale.

*** In all the States of the Reich provisions have been adopted prohibiting keeping the Colorado beetle [*Leptinotarsa decemlineata*] in the living state; these measures are similar to those published in Prussia [see this *Bulletin*, 1933, No. 1, p. 10]. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1933, Bd. V, Nr. 1, S. 5-6).

Germany (Anhalt). — By Decree of 18 April 1933, new regulations relating to the campaign against potato wart disease [*Synchytrium endobioticum*] have been adopted.

Crops and stocks of potatoes will be subject to inspection by the police and by the Plant Protection Service.

Every fresh appearance of the disease, ascertained or suspected, must be notified within 24 hours to the police who will forward the notification to the Central Bureau of the Plant Protection Service. This Bureau will report every new appearance to the ' Biologische Reichsanstalt ' of Berlin-Dahlem.

On fields recognised as infected the remains of potato crops must be collected and carefully destroyed by fire or by burying.

It is forbidden to replant potatoes dug on such fields.

It is also forbidden to take them away from the farm where they were dug and they may only be used when boiled or baked.

The parings of these potatoes must be collected and burnt or given to the cattle after having been cooked. All transportation of potatoes coming from infected land should be avoided as far as possible.

On farms known to be infected by potato wart disease it is prohibited to grow any varieties of potatoes except those which have been declared absolutely immune by the German Service of Plant Protection. Infected farms are forbidden to sell or give away stable manure or liquid manure.

Tubers of resistant varieties, dug on infected ground, may be replanted on infected soil belonging to the same farm or in the proximity of their original soil.

Cellars and other localities where potatoes infected by wart disease have been stored must be well cleaned and disinfected with quick lime.

In communes where the potato wart disease has been ascertained to exist it is forbidden to cultivate other varieties of potatoes not recognised as immune to this disease.

This regulation will be applied to fields not exceeding ½ hectare the year following the ascertaining of the potato wart disease ; after two years to fields of ½–10 hectares and after 3 years to fields exceeding 10 hectares.

Further, all the agricultural and horticultural enterprises of the country must gradually substitute varieties liable to disease by resistant varieties. This substitution must be completed in 1937.

Modifications of these regulations are permissible until further notice, for the special culture of very precocious varieties.

All those occupied with the sale or exchange of potatoes are obliged to declare the name of the variety and its degree of resistance to potato wart disease.

The local police authorities may declare limited regions to be 'zones in danger of contamination' and may apply the above quoted regulations. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1933, Bd. V, Nr. 1, S. 6-8).

Germany (**Brandenburg**). — By Police Ordinance of 30 May 1933, relating to the campaign against the Pine Moth (*Panolis flammea*) the measures are made known that are to be taken for protecting human beings and animals against the dangers that may result from the use of the sprayers. Inter alia, it is forbidden during a period to be fixed by the official journal, to enter the lands subjected to the treatment, to gather berries, mushrooms, or grass on these lands, or to drive either cattle or bees on to such lands. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1933, Bd. V, Nr. 1, S. 26-27).

Germany (**Bremen**). — By Police Ordinance of 29 April 1933 the campaign of control of voles has been rendered obligatory. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1933, Bd. V, Nr. 1, S. 9).

Germany (**Hanover**). — By notification of the Delegation of the Stade circle, dated 29 May 1933, cherries intended for export to England must be free from cherry fruit-fly [*Rhagoletis cerasi*] and furnished with a number for checking purposes. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin, Juli 1933, 13. Jahr., Nr. 7, S. 55).

*** By Police Ordinance of 19 June 1933, the use of lead arsenate is forbidden in orchards in the district of Stade, as from 25 June 1933. Receptacles which have contained lead arsenate products must be got rid of in such a way as to exclude all possibility of contact with human beings or animals. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1933, Bd. V, Nr. 1, S. 27-28).

Germany (**Upper Silesia**). — By Police Ordinance of 23 March 1933 new regulations relating to control of potato wart disease [*Synchytrium endobioticum*] have been issued for the district of Oppeln. A distinction is made between infected and threatened regions. The measures to be applied in infected regions may be, on special Decree, extended to the regions threatened with infection. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin, Juli 1933, 13. Jahrg., Nr. 7, S.54-55).

Germany (**Thuringia**). — By the Police Ordinances of 14 and 15 March 1933 control of the Apple Little Ermine Moth (*Hyponomeuta malinellus*) has been rendered obligatory in the district of Camburg. Control must be extended to hedges and shrubs infested by this insect and in the neighbourhood of the fruit trees.

In certain communes, expressly indicated, all the fruit trees must be treated for prevention of the pest. With this object an application is recommended before the opening of the flower buds of carbolineum at 8 to 10 per cent., and after flowering, of lead arsenate at 0.4 per cent. (*Amtliche Pflanzenschutzbestimmungen,* Berlin, 1. Juli 1933, Bd. V, Nr. 1, S. 30-31).

Western Australia. — By Proclamation of 11 May, 1933 the Proclamation published in the *Government Gazette* on 1 May, 1931 prohibiting the bringing into the State of seeds of *Phaseolus vulgaris, Ph. lunatus* and *Ph. coccineus,* has been revoked. (*Government Gazette of Western Australia,* Perth, May 19, 1933, No. 24, p. 736).

Belgium (1). — By Ministerial Decree of 14 July 1933 the import into Belgium of peaches, including nectarines, and of fresh apricots of whatever origin or shipment, is authorised only if it appears from the examination conducted by the Belgium Special Plant Disease Service, carried out at the expense of the importers, that the shipments are free from 'worm'. By 'worm' should be understood the larva of fruit flies belonging to the family of the *Trypetidae,* as well as the larva of *Anarsia lineatella, Cydia molesta* and *Conotrachelus nenuphar.*

It will be possible to consign the parcels only through the Customs Offices of Antwerp (offices 2, 3 and 4), Brussels (offices 1, 2, 3), Haren-Aviation, Liège, Erquelinnes (station), Esschen (station), Montaleux (Mouscron), Mouscron (station), Montzen (station) and Quévy (station).

Consignments not recognised as exempt from 'worm' at the Offices of Erquelinnes, Esschen, Montaleux, Mouscron, Montzen and Quévy, will be rejected.

Consignments not recognised as exempt at the Offices of Antwerp, Brussels, Haren-Aviation and Liège, will be destroyed by burning at the expense of the importers.

Any person who reports the presence of 'worm' in his orchards or in his packing sheds for peaches, nectarines or apricots, is expected to make a declaration to the Burgomaster of the commune. The latter will immediately inform the Minister of Agriculture.

Infringements of the preceding provisions will be punished with the penalties prescribed in Art. 21 of the Royal Decree of 23 May 1929.

Cameroon (French). — The Ministerial Decree of 4 April 1933 containing regulations for the cultivation of coffee in French Cameroon prescribes, in particular, that any planter who has noted presence of *Hemileia vastatrix* must, as a matter of compulsion, make a declaration to the administrative authority. (*L'Agronomie Coloniale,* Paris, juillet 1933, 22ème année, nº 187, p. 26-27).

(1) Communication from the Ministère de l'Agriculture et des Classes Moyennes of Belgium to the International Institute of Agriculture.

French Colonies. — By Decree of the Minister of the Colonies, dated 1 April 1933, the first paragraph of Art. 5 of the Decree of 27 February 1922 containing prescriptions as to the measures to be taken against the coffee-berry borer (*Stephanoderes hampei*) has been specified as follows : —

The provisions of the present Decree are applicable to the products enumerated in Art. 1 and presented for importation into or transit across Indo-China, Madagascar, New Caledonia, Guadeloupe, Martinique, French Guiana, Réunion and French India.

All provisions contrary to the present Decree have been cancelled. (*Journal Officiel de la République Française*, Paris, 11 avril 1933, LXV^{ème} année, n° 86, p. 3723-3724).

Spain. — By ' Orden ' of 16 March 1933, and only under reserve of suspension if the state of the shipments makes it advisable, the consignments of dry or desiccated fruits coming from the port of Hamburg will be admitted into Spain only if accompanied by a copy of phytopathological certificates delivered by the experts of the country of origin, and certified as in order by German experts of the port of Hamburg. These certificates relate to each of the lots making up a consignment. In addition these consignments must possess the certificate of phytopathological inspection issued by the experts of the port of Hamburg, and at the time of the inspection made by Spanish Phytopathological Service the conditions must also be found to be satisfactory. (*Gaceta de Madrid*, Madrid, 23 mayo 1933, año CCLXXII, tomo II, núm. 143, pág. 1364).

*** An ' Orden ' of 20 June 1933 establishes the measures relating to locust control : immediate declaration of the existence of locusts, determination of the limits of the invaded land, and the other requirements imposed by the Law of 21 May 1908. (*Gaceta de Madrid*, Madrid, 28 junio 1933, año CCLXXII, tomo II, núm. 179, págs. 2298 y 2299).

France. — By Decree of 14 May 1933 regarding measures for checking the spread of the Colorado beetle [*Leptinotarsa decemlineata*], article 15 of the Decree of 13 February 1923 has been completed as follows : —

' Ministerial Decrees, delivered in the same forms, will determine the conditions in which potato tubers, recognised as healthy, clean and properly graded, may be transported to their destination in immune regions '. (*Journal Officiel de la République Française*, Paris, 16 mai 1933, LXV^{ème} année, n° 115, p. 5079-5090).

*** By Ministerial Decree of the same date potato tubers recognised as healthy, clean and properly graded, gathered the preceding year in zones infested by the Colorado beetle or in protection zones may by way of exception be transported to their destination in immune regions during the period between 15 May and 1 July of each year, with due regard for the observation of the regulations laid down by the Decree of 15 March 1932 [see this *Bulletin*, 1932, No. 4, p. 57-58]. (*Ibid.*, p. 5080).

*** By Ministerial Decree of 16 May 1933 the list of countries infected by potato wart disease (*Synchytrium endobioticum*) enumerated in article 1 of the Ministerial Decree of 6 June 1924, modified by the Ministerial Decrees of 20 December 1924, 2 November 1925 and 15 September 1927 [see this *Bulletin*, 1927, No. 11, p. 77], is completed by : Portugal. (*Ibid.*, 19 mai 1933, nº 118, p. 5210).

*** By Circular No. 549 the General Direction of the Service for the industrial exploitation of tobacco has extended to the agricultural, horticultural, viticultural and other Syndicates, the sale in half litre tins, of titrated extracts of nicotine, at 500 grams of nicotine a litre. At the same time it has modified the sale price of these extracts and has reduced the minimum quantity of extracts admitting of reductions or rebates. (Ministère de l'Agriculture. Direction de l'Agriculture. *Bulletin de l'Office de Renseignements Agricoles*, Paris, 1er juin 1933, année 1933, nº 11, p. 225-226).

*** By Decree of 18 July 1933 and in modification of the prohibition contained in Art. 1 of the Decree of 8 March 1932 [see this *Bulletin*, 1932, No. 4, p. 57] the transit across French territory of living plants and parts of living plants including fresh fruits (trees, shrubs, nursery stock, cuttings and other plant parts) originating in or coming from countries infected with San José scale (*Aspidiotus perniciosus*), may be authorised under the conditions fixed by Decree of the Minister of Agriculture.

The transit across French territory of living plants and parts of living plants indicated above, but originating in countries not infected by San José scale, is authorised only under the conditions fixed by Decree of the Minister of Agriculture. (*Journal Officiel de la République Française*, Paris, 29 juillet 1933, LXVème année, nº 176, p. 8027).

*** By Ministerial Decree of 18 July 1933, exceptionally and by way of modification of the prohibition included in Art. 1 of the Decree of 8 March 1932, import permits may be granted under certain reserves to horticulturists regularly registered at the State Plant Inspection Service provided they apply for such permits to the Ministry of Agriculture, for lily bulbs of Japanese origin. (*Ibid.*, p. 8028).

*** By Ministerial Decree of 22 July 1933 - in view of the fact that the presence of San José scale has been reported on fresh fruits coming from Spain – the prohibition contained in Art. 1 of the Decree of 8 March 1932 is applicable to shipments coming from Spain.

The entry into and transit through France of fruits coming from Spain may take place, under the supervision of the Plant Protection Service, through the Customs Offices designated by the Decree of 9 May 1932 [see this *Bulletin*, 1932, nº 6, p. 100] and by that of Cerbère (*Ibid.*, 23 juillet 1933, nº 171, p. 7678).

*** A Ministerial Decree of 24 July 1933 fixes the conditions of transit across French territory of living plants and part of living plants, including fresh fruits, originating in or coming from countries infected with San José scale. (*Ibid.*, 29 juillet 1933, nº 176, p. 8027-8028).

Italy. — By Ministerial Decree of 8 June 1933 an obligatory Consortium (Syndicate) of olive growers has been formed in the province of Chieti, the purposes of which include the control of diseases and pests of the olive. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 14 giugno 1933, anno 74°, n. 138, p. 2501).

*** A Ministerial Decree of 10 July 1933 establishes the phytosanitary regulations to be followed temporarily for the importation from abroad of potato varieties intended exclusively for planting for the season of 1933-1934. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 15 luglio 1933, anno 74°, n. 163, pp. 3189-3191).

*** By Ministerial Decree of 8 August 1933 the commune of Marsaglia, in the province of Cuneo, has been declared to be infested with grape phylloxera. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 22 agosto 1933, anno 74°, n. 194, p. 3758).

Morocco (French Zone). — By Dahir of 29 April 1933 (4 moharrem 1352) a fee has been instituted for cost of sanitary inspection at the time of importing and exporting plants, parts of plants or plant products. This is applicable also to insects and to cryptogams of economic value allowed to enter or in transit across the French Zone of Morocco, excluding cryptogams intended for therapeutic use or medical experiment, and of insects or plants for collections. (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 9 juin 1933, XXII[ème] année, n° 1076, p. 500).

*** A Vizirial Decree of 8 May 1933 (13 moharrem 1352) regulates the importation of seeds of forage plants into the French Zone of Morocco. Seeds of forage plants, and in particular those belonging to the genera *Medicago*, *Trifolium*, *Lotus* and *Anthyllis* are subjected to an examination with the object of ascertaining if they contain any *Cuscuta* seed. (*Ibid.*, p. 507).

*** A Vizirial Decree of 9 May 1933 (14 moharrem 1352) relates to the release of certificates of sanitary inspection on the exporting of plants, parts of plants or plant products. (*Ibid.*, p. 500-501).

*** A Vizirial Decree of 17 May 1933 (22 moharrem 1352) fixes the rate of the fee for cost of sanitary inspection for the import into French Zone of Morocco of plants, parts of plants and vegetable products. (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 16 juin 1933, XXII° année, n° 1077, p. 527).

*** By Decree of the 'Directeur' of Waters and Forests, dated 20 May 1933, owners and holders of land situated within the territory of the Bureaux of Native Affairs of Kelaa des Sless and Tafrant (region of Fez), are authorised to destroy wild boars on their land, at any time and by any means, except fire. Boars killed in these conditions may not however be transported, hawked or exposed for sale. The present Decree will remain effective until the last day of the close season of 1933. (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 2 juin 1933, XXII[ème] année, n° 1075, p. 489).

*** The Dahir of 9 June 1933 (15 safar 1352) fixes *inter alia* the powers and duties of the Service of Plant Protection and Phytosanitary Inspection. (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 14 juillet 1933, XXII[ème] année, n° 1081, p. 630-631).

*** The Dahir of 1 July 1933 (7 rebia I 1352) fixes the powers and duties of the officials and agents of the technical staff of the said Service. (*Ibid.*, p. 637).

*** A Vizirial Decree of 1 July 1933 (7 rebia I 1352) regulates the organisation of the staff of the General Administration of Agriculture, Commerce and Land Settlement which includes that of the Service of Plant Protection and Phytosanitary Inspection. (*Ibid.*, p. 643-653).

*** Another Vizirial Decree of the same date fixes the grades and salaries of the staff of the said Service. (*Ibid.*, p. 653).

*** A third Vizirial Decree of the same date is concerned with the charges collected by the technical staff of the said Service. (*Ibid.*, p. 653).

Rumania (1). — By Ministerial Decision No. 37793 of 30 May 1933, fresh pears and apples intended for export must be accompanied by a plant health certificate released by one of the following institutions:— Section of Plant Protection of the Rumanian Institute of Agricultural Research, Plant Protection Service of the Ministry of Agriculture and Public Lands, Plant Protection Station of Bessarabia.

The inspectors of the National Institute for Exportation will not allow these products to leave the country unless they are accompanied by a plant health certificate.

The fruit growing areas of the country are subject to the control exercised by the bodies belonging to the Plant Protection Service.

Saar Basin. — In virtue of the Police Ordinance of 2 February 1933 and with the object of avoiding the introduction of San José scale (*Aspidiotus perniciosus*), it is prohibited to import living plants or parts of plants coming from America, Australia including Tasmania and New Zealand, the Hawaii Islands, Japan, China, India, Mesopotamia, Union of South Africa, Austria, Hungary and Rumania. This prohibition also applies to any object which has been used to pack or to keep any such living plants or parts of plants.

Fresh fruits and their residues coming from countries other than these indicated may be imported only through certain authorised Customs Offices and on condition that the consignments are accompanied by an official certificate of the country of origin, a model form of which is attached to the text of the present Ordinance.

Consignments not in accordance with these regulations will be sent back or, if recognised as infested with San José scale, destroyed on the spot by burning. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1933, Bd. V., Nr. 1, S. 29-30).

(1) Communication from the Ministry of Agriculture and Public Lands of Rumania to the International Institute of Agriculture.

Tripolitania. — By Decree of the Governor, dated 24 June 1933, taking effect as from 1 August 1933, the working of nurseries, the industry and trade in plants, parts of plants and seeds intended for cultivation, are limited to firms or persons who receive express authorisation by Decrees of the Governor.

The authorisation to continue undertakings already in existence or to establish new ones will be granted by the Government of the Colony on a favourable technical report being received from the Phytopathological Section of the Royal Institute for Agricultural Services which will for this purpose make the necessary enquiries.

This authorisation may be suspended for an indefinite period, when it has been shown, as the result of periodical inspections, which must be held by the Phytopathological Section in respect of the nurseries of the Colony, that the products of these nurseries are attacked by parasites of diseases either dangerous or contagious. (Governo della Tripolitania. Direzione Affari Economici e Colonizzazione. *Notiziario Economico*, Tripoli, maggio-giugno 1933, anno VI, n. 5-6, pp. 24-25, in *Tripolitania*, Tripoli, giugno 1933, anno III, n. 6).

RECENT BIBLIOGRAPHY

ARNAUD, G. et GAUDINEAU, M. Le traitement de la carie du blé (1930-31 et 1931-32). *Revue de Pathologie Végétale et d'Entomologie Agricole*, Paris, 1933, tome XX, fasc. 4-5, p. 188-196, fig. I.
[*Tilletia*].

BENNETT, F. T. Fusarium species on British cereals. *Fusarium nivale* (Fr.) Ces. (= ? *Calonectria graminicola* (Berk. & Br.) Wr.). *The Annals of Applied Biology*, London, 1933, Vol. XX, No. 2, pp. 272-290, figs. 1-3, pls. XVII-XX. References, pp. 289-290.

BERKELEY, G. H., und MADDEN, G. O. Transmission of streak and mosaic diseases of tomato through seed. No. II. *Scientific Agriculture*, Ottawa, Canada, 1933, Vol. XIII, No. 7, pp. 455-457. Reference, p. 457.
[With title and summary also in French].

BICHET, R. Phosphure de zinc et fluosilicate de baryum contre les courtilières. *Le Progrès Agricole et Viticole*, Montpellier, 1933, 50e année, nº 18, p. 429-432.
[*Gryllotalpa gryllotalpa* (*vulgaris*)].

BLANCHARD, M. Note sur l'emploi des composés d'arsenic en arboriculture fruitière. *Revue de Pathologie Végétale et d'Entomologie Agricole*, Paris, 1933, tome XX, fasc. 4-5, p. 156-159.

BOURIQUET, G. Une Scrophulariacée parasite du riz à Madagascar. *Revue de Pathologie Végétale et d'Entomologie Agricole*, Paris, 1933, tome XX, fasc. 3, p. 149-151.
[*Rhamphicarpa longiflora*].

Chevalier, Gaston. Le pouvoir mouillant des bouillies cupriques et des émulsions antiparasitaires. Son évaluation. *Le Progrès Agricole et Viticole*, Montpellier, 1933, 50e année, nº 22, p. 522-526.

Cristinzio, M. Osservazioni su di una malattia del pesco. R. Osservatorio Regionale di Fitopatologia di Portici (Napoli) : Sezione di Patologia Vegetale (Laboratorio di Studio e Sperimentazione) presso il R. Istituto Superiore Agrario : Portici (Napoli). Ricerche, osservazioni e divulgazioni fitopatologiche, per la Campania ed il Mezzogiorno. II. Portici, 1933, pp. 28-44, figg. A-D. Bibliografia, pp. 42-44.

[*Cytospora leucostoma*].

Cristinzio, M. La disinfezione dei semenzai. R. Osservatorio Regionale di Fitopatologia di Portici (Napoli): Sezione di Patologia Vegetale (Laboratorio di Studio e Sperimentazione) presso il R. Istituto Superiore Agrario : Portici (Napoli). Ricerche, osservazioni e divulgazioni fitopatologiche, per la Campania ed il Mezzogiorno. II. Portici, 1933, pp. 45-54.

Eidmann, H. Der Einfluss alternierender Temperaturen auf die Eiraupe der Forleule (*Panolis flammea* Schiff.) nebst Bemerkungen über die epidemiologische Bedeutung dieses Studiums. *Forstwissenschaftliches Centralblatt*, Berlin 1933, 55. Jahrg., Heft 6, S. 185-199, Abb. 1-3. Literaturverzeichnis, S. 198-199.

Foex, E., et Roselia, E. Quelques observations sur le piétin des céréales. *Revue de Pathologie Végétale et d'Entomologie Agricole*, Paris, 1933, tome XX, fasc. 4-5, p. 172-187.

[*Ophiobolus graminis*, *O. herpotrichus*, *Leptosphaeria herpotrichoides*, *Wojnowicia graminis*, *Cercosporella herpotrichoides*].

Gasow, H. Zur Bekämpfung der Schnakenlarven (*Tipula paludosa* Mgn. und *Tipula oleracea* L.) mit chemischen Mitteln. *Landwirtschaftliche Jahrbücher*, Berlin 1933, 77. Bd., Heft 1, S. 69-112, Abb. 1-4. Literaturverzeichnis, S. 110-112.

Grainger, J. The movement of tobacco mosaic virus in its host. *The Annals of Applied Biology*, London, 1933, Vol. XX, No. 2, pp. 236-257, figs. 1-5. References, p. 257.

Greaney, F. J. Experiments on the control of oat rusts by sulphur dust. *Scientific Agriculture*, Ottawa, Canada, 1933, Vol. XIII, No. 7, pp. 426-434, figs. 1-2. Literature cited, pp. 433-434.

[With title and summary also in French. *Puccinia graminis avenae*, *P. coronata avenae*].

Harris, R. V. The strawberry « yellow-edge » disease. *The Journal of Pomology and Horticultural Science*, London, 1933, Vol. XI, No. 1, pp. 56-76, figs. 1-2, pls. I-IV. Bibliography, pp. 74-76.

[Virus disease].

Hering, M. Zwei neue Microlepidopteren aus Italien. *Bollettino del Laboratorio di Entomologia del R. Istituto Superiore Agrario di Bologna*, Bologna, 1932-33, vol. V, pp. 104-108, figg. I-III.

[*Cemiostoma coronillae* n. sp. on *Coronilla emerus* ; *Sophronia grandii* n. sp. on *Triticum vulgare* in the vicinity of Bologna. Description in German].

Hopkins, J. C. F. Plant disease and environment in Southern Rhodesia. *Tropical Agriculture*, Trinidad, B. W. I., 1933, Vol. X, No. 6, pp. 172-177. References, p. 177.

Jenkins, Anna E. A Sphaceloma attacking navel orange from Brazil. *Phytopathology*, Lancaster, Pa., 1933, Vol. 23, No. 6, pp. 538-545, fig. 1. Literature cited, p. 545.

[*Sphaceloma fawcettii* var. *viscosa* n. var. on *Citrus sinensis*. Description of the new variety in English].

Kearns, H. G. H., and Walton, C. L. The control of the loganberry and raspberry beetle (*Byturus tomentosus*). Experiments with pyrethrum and derris washes and dusts. *The Journal of Pomology and Horticultural Science*, London, 1933, Vol. XI, No. 1, pp. 39-52. Literature, p. 52.

Kearns, H. G. H., and Walton, C. L. The adult raspberry beetle as a cause of serious blossom injury. *The Journal of Pomology and Horticultural Science*, London, 1933, Vol. XI, No. 1, pp. 53-55, fig. 1. Literature, p. 55.

[*Byturus tomentosus*].

Kearns, H. G. H., and Walton, C. L. A note on the control of the raspberry beetle (*Byturus tomentosus* Fabr.) by means of a barium silicofluoride wash. *The Journal of Pomology and Horticultural Science*, London, 1933, Vol. XI, No. 1, pp. 77-80. References, p. 80.

Krishna Ayyar, P. N. Some experiments on the control of the root-gall nematode in South India. *Madras Agricultural Journal*, Coimbatore, S. India, 1933, Vol. XXI, No. 3, pp. 97-107, pls. A-B. Literature cited, p. 107.

[*Heterodera radicicola*].

Leefmans, S., en van der Vecht, J. De groote agaatslak (Achatina fulica Fer.) in Nederlandsch-Indië. *Landbouw*, Buitenzorg, 1933, VIII jaarg., no. 10, blz. 668-677, 3 fig. Literatuur, blz. 676.

[In Dutch, with summary in English].

Lever, R. J. A. W. Status of economic entomology in the British Solomon Islands. *Bulletin of Entomological Research*, London, 1933, Vol. XXIV, Pt. 2, pp. 253-256. References, p. 256.

Magerstein, Winz. Das Auftreten der Goldrute in Weidenkulturen. *Landwirtschaftliche Fachpresse*, Tetschen 1933, 11. Jahrg., Nr. 6, S. 32-33, 1 Abb.

[*Solidago serotina*].

Malenotti, Ettore. Ricerche compiute per scoprire i quartieri d'inverno delle cimici del frumento. *Nuovi Annali dell'Agricoltura*, Roma, 1933, anno XIII, n. 1-2, pp. 95-104, 1 carta.

[In west Venetia and east Lombardy *Aelia rostrata* and *Eurygaster* spp. hibernate in the hills or mountains].

MARTIN, HUBERT. Studies upon the copper fungicides. II. Some modifications of Bordeaux mixture designed to overcome practical difficulties in its application. *The Annals of Applied Biology*, London, 1933, Vol. XX, No. 2, pp. 342-363. References, p. 363.

MARTÍNEZ, ANTONIO, y PLANES, SILVERIO. El servicio provincial de plagas del campo. *Frutográfico*, Valencia, 1933, año V, núm. 37, págs. 6 y 7, 3 figs., 1 gráfico.
[Report on the activities of the Plant Protection Service of the province of Valencia, Spain].

MATZ, JULIUS. Artificial transmission of sugar cane mosaic. *Journal of Agricultural Research*, Washington, D. C., 1933, Vol. 46, No. 9, pp. 821-839, fig. 1. Literature cited, pp. 837-839.

MCNAMARA, HOMER C., and HOOTON, DALTON R. Sclerotia-forming habits of the cotton root-rot fungus in Texas black-land soils. *Journal of Agricultural Research*, Washington, D. C., 1933, Vol. 46, No. 9, pp. 807-819, figs. 1-5. Literature cited, p. 819.
[*Phymatotrichum omnivorum*].

METCALFE, MARGOT E. Some Cecidomyidae attacking the seed of *Dactylis glomerata* L. and *Lolium perenne* L. *The Annals of Applied Biology*, London, 1933, Vol. XX, No. 2, pp. 327-341. References, p. 341.
[*Dasyneura dactylidis* n. sp. and *Contarinia dactylidis* on *Dactylis glomerata*; *Contarinia lolii* n. sp. on *Lolium perenne*. Description of the two new species in English].

MILES, MARY. Observations on growth in larvae of *Plodia interpunctella* Hubn. *The Annals of Applied Biology*, London, 1933, Vol. XX, No. 2, pp. 297-307, figs. 1-2. References, p. 307.

MILLER, N. C. E. Insect pests of tobacco in Malaya. *The Malayan Agricultural Journal*, Kuala Lumpur, 1933, Vol. XXI, No. 2, pp. 66-72, 1 pl.
[*Atractomorpha crenulata*, *Dicyphus* sp., *Engytatus volucer*, *Prodenia litura*, *Agrotis ypsilon*, *Chloridea* (*Heliothis*) *obsoleta*, *Chlor. assulta*, *Chlor. flavigera*, *Plusia chalcites*, *Pl. signata*, *Phthorimaea heliopa*, *Psara submarginalis*, *Laprosema diemenalis*].

MIRAT, G. Note sur les bouillies cupriques à l'alun. *Le Progrès Agricole et Viticole*, Montpellier, 1933, 50e année, nº 22, p. 527-530.

MOORE, ELIZABETH JANE. The use of phenosafranin for staining fungi on culture media or in host tissue. *Science*, Lancaster, Pa., 1933, New Series, Vol. 77, No. 1984, pp. 23-24.

PODHORSKY, J. Kann ein vollständig sich selbst überlassener Hochgebirgswald durch Überhandnehmen von Forstinsekten zu einem Gefahrenherd werden? *Allgemeine Forst- und Jagd-Zeitung*, Frankfurt am Main 1933, 109. Jahrg., S. 151-156.

PUGH, GRACE WINELAND, JOHANN, HELEN, and DIKSON, JAMES G. Factors affecting infection of wheat heads by Gibberella saubinetii. *Journal of Agricultural Research*, Washington, D. C., 1933, Vol. 46, No. 9, pp. 771-797, figs. 1-12. Literature cited, p. 797.

RAUCOURT, M. Revue de phytopharmacie. *Annales Agronomiques*, Nouvelle série, Paris, 1933, 3e année, nº 2, p. 232-249. Bibliographie, p. 248-249.

[Contents : — La question du soufre. La bouillie bordelaise. Les poudres et leur adhérence. Les huiles minérales. Les plantes à roténone].

RAUCOURT, M., et DUPOUX, R. Expériences de poudrage en grande culture dans le Limousin ; dangers que présente l'entraînement par le vent des poudres arsenicales. *Revue de Pathologie Végétale et d'Entomologie Agricole*, Paris, 1933, tome XX, fasc. 4-5, p. 160-170. Bibliographie, p. 170.

RATHSCHLAG, H. Ertragsschäden an Getreide durch die Getreidehalmwespe (*Cephus pigmaeus*) unter Berücksichtigung der Aussaatzeit, Bodenbearbeitung, Vorfrucht und Düngung. (II. Mitteilung). *Fortschritte der Landwirtschaft*, Berlin-Wien 1933, 8. Jahrg., Heft 3, S. 49-52, Abb. 1-5. Literatur, S. 52.

RICCARDO, S. La cancrena secca delle patate per «fusariosi» in provincia di Napoli. R. Osservatorio Regionale di Fitopatologia di Portici (Napoli) : Sezione di Patologia Vegetale (Laboratorio di Studio e Sperimentazione) presso il R. Istituto Superiore Agrario : Portici (Napoli). Ricerche, osservazioni e divulgazioni fitopatologiche, per la Campania ed il Mezzogiorno. II. Portici, 1933, pp. 3-16, figg. 1-2, tav. I-II.

[*Fusarium oxysporum*].

RUNGS, CH. Une diaspine nouvelle du Maroc : *Targionia Regnieri*. *Bulletin de la Société d'Histoire Naturelle de l'Afrique du Nord*, Alger, 1933, tome XXIVe, nº 5, p. 114-117, fig. 1.

[This scale insect infect feeds on the aerial parts of *Ulex spectabilis*. Description in French].

SAMOGGIA, A. Nota sulla *Rhagoletis cerasi* L. *Bollettino del Laboratorio di Entomologia del R. Istituto Superiore Agrario di Bologna*, Bologna, 1932-33, vol. V, pp. 22-48, figg. I-XII.

SAMPSON, KATHLEEN. The biology of oat smuts. III. The development of two biological species of *Ustilago Kolleri* (Wille) in a selection of *Avena strigosa orcadensis* (Marquand). *The Annals of Applied Biology*, London, 1933, Vol. XX, No. 2, pp. 258-271, figs. 1-5, pl. XVI. References, pp. 270-271.

SCHOENE, W. J., and UNDERHILL, G. W. Economic status of the green stinkbug with reference to the succession of its wild hosts. *Journal of Agricultural Research*, Washington, D. C., 1933, Vol. 46, No. 9, pp. 863-866, fig. 1.

[*Acrosternum hilaris*].

SCHWARZ, HANS. Beobachtungen über die Hauptfruchtform des Eichenmehltaues (*Microsphaera alni* [Wallr.] var. *quercina*) in Oesterreich. *Wiener Allgemeine Forst- und Jagd- Zeitung*, Wien 1933, 51. Jahrg., Nr. 18, S. 99.

SCHWARZ, HANS. Die Ursachen des epidemischen Ulmensterbens und die Möglichkeiten seiner Bekämpfung. *Gartenzeitung*, Wien 1933, Nr. 6, S. 65-67. Literatur, S. 67.

[*Ceratostomella ulmi*].

SCHWARZ, HANS. Neue Schädlinge der Douglasie. *Zeitschrift für Pflanzenkrankheiten (Pflanzenpathologie) und Pflanzenschutz*, Stuttgart 1933, 43. Bd., Heft 7, S. 417-418.

[*Hylecoetus dermestoides*, *Sirex* sp., *Coleophora laricella*, *Scythropus mustella*, *Tortrix* sp., *Dioryctria* sp.].

SCHWARTZ, W. Ueber Versuche mit "Hylarsol" gegen *Hylobius abietis* in der Stadtforst Fürstenwalde/Spree. *Zeitschrift für Forst- und Jagdwesen*, Berlin 1933, LXV. Jahrg., 3. Heft, S. 152-166, Abb. 1-5. Literatur, S. 166.

SEITNER, M. Lophyrus rufus Ratz. (= sertifer Geoffr.) an der Zirbe im Kampfgürtel des Waldes. *Centralblatt für das gesamte Forstwesen*, Wien 1933, 59. Jahrg., Heft 5/6, S. 129-131.

SHARGA, U. S. Biology and life history of *Limothrips cerealium* Haliday and *Aptinothrips rufus* Gmelin feeding on Gramineae. *The Annals of Applied Biology*, London, 1933, Vol. XX, No. 2, pp. 308-326, fig. 1, pl. XXI. References, pp. 324-326.

SIEMASZKO, W. Quelques observations sur les maladies des plantes en Pologne. *Revue de Pathologie Végétale et d'Entomologie Agricole*, Paris, 1933, tome XX, fasc. 3, p. 139-148, pl. V. Bibliographie, p. 147-148.

[Diagnoses are given *inter alia* of *Microsphaera polonica* Siemaszko n. sp., the ascigerous form of *Oidium hortensiae*, and of *Ustilago raciborskiana* Siemaszko et Wroblewski n. sp. on *Polygonum aubertii*].

SIMMONDS, J. H. Banana leaf spot. Progress report. *Queensland Agricultural Journal*, Brisbane, 1933, Vol. XXXIX, Pt. 1, pp. 21-40, pls. 6-9. Literature cited, p. 40.

[*Cercospora musae* (Zimm.)].

SIMMONDS, P. M., and SALLANS, B. J. Further studies on amputations of wheat roots in relation to diseases of the root system. *Scientific Agriculture*, Ottawa, Canada, 1933, Vol. XIII, No. 7, pp. 439-448, figs. 1-5. Literature cited, p. 448.

[With title and summary also in French].

STAPP, C., und BORTELS, H. Der Pflanzenkrebs und sein Erreger Pseudomonas tumefaciens. III. Mitteilung. Zur Frage der Bekämpfung. *Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten*, II. Abt., Jena 1933, 88. Bd., Nr. 13/16, S. 313-319, Abb. 1-6. Literatur, S. 319.

STEER, W. Studies on *Byturus tomentosus* Fabr. III. Further experiments on its control on raspberries, loganberries and blackberries. *The Journal of Pomology and Horticultural Science*, London, 1933, Vol. XI, No. 1, pp. 19-38, figs. 1-7. References, p. 37.

STEINER, G. and BUHRER, EDNA M. The nematode Tylenchus similis, Cobb as a parasite of the tea plant (Thea sinensis, Linn.), its sexual dimorphism, and its nemic associates in the same host. *Zeitschrift für Parasitenkunde*, Berlin 1933, 5. Bd., 2. Heft, S. 412-420, Fig. 1-5. Literature cited, S. 420.

STEVENS, F. L. Two fungous invasions often following the coconut leaf miner, Promecotheca cumingii Baly. *The Philippine Agriculturist*, Laguna, P. I., 1933, Vol. XXI, No. 2, pp. 80-82, figs. 1-2.

[*Pestalozzia palmarum* and *Epicoccum cocos* n. sp. Description of the new species in English].

SUMMERVILLE, W. A. T. Notes on the onion thrips. *Queensland Agricultural Journal*, Brisbane, 1933, Vol. XXXIX, Pt. 1, pp. 41-46.

[*Thrips tabaci*].

SWANBACK, T. R., and JACOBSON, H. G. M. Brown rootrot of tobacco. *Science*, Lancaster, Pa., 1933, New Series, Vol. 77, No. 1989, p. 169.

[Caused by lack of calcium in the plant].

TAKAHASHI, WILLIAM N., [and] RAWLINS, T. E. Rod-shaped particles in tobacco mosaic virus demonstrated by stream double refraction. *Science*, Lancaster, Pa., 1933, New Series, Vol. 77, No. 1984, pp. 26-27, figs. 1-2.

THOMAS, H. E. The quince-rust disease caused by Gymnosporangium germinale. *Phytopathology*, Lancaster, Pa., 1933, Vol. 23, No. 6, pp. 546-553, fig. Literature cited, p. 553.

THORPE, W. H. Notes on the natural control of *Coleophora laricella*, the larch case-bearer. (With an Appendix by C. FERRIÈRE). *Bulletin of Entomological Research*, London, 1933, Vol. XXIV, Pt. 2, pp. 271-291, figs. 1-20. References, p. 291.

TRINCHIERI, GIULIO. Secondo contributo alla bibliografia delle cavallette. *Rassegna Economica delle Colonie*, Roma, 1933, anno 21°, n. 3-4, pp. 369-410.

[This bibliography, the first part of which has now appeared, comprises 1212 titles and is a continuation of the list of references accompanying the monograph entitled « La lutte contre les sauterelles dans les divers pays », published by the International Institute of Agriculture in 1916].

TROTTER, A. Contributi alla patologia del nocciuolo. R. Osservatorio Regionale di Fitopatologia di Portici (Napoli) : Sezione di Patologia Vegetale (Laboratorio di Studio e Sperimentazione) presso il R. Istituto Superiore Agrario : Portici (Napoli). Ricerche, osservazioni e divulgazioni fitopatologiche, per la Campania ed il Mezzogiorno. II. Portici, 1933, pp. 17-27, figg. 1-3.

[Killing off of hazel stems caused by *Cytospora* sp.].

TULLIS, E. C. Ophiobolus oryzinus, the cause of a rice disease in Arkansas. *Journal of Agricultural Research*, Washington, D. C., 1933, Vol. 46, No. 9, pp. 799-806, fig. 1. Literature cited, pp. 805-806.

VAN DER VECHT, J. Het poetjoek-rupsje van de peper (Laspeyresia hemidoxa Meyr.). *Landbouw*, Buitenzorg 1933, VIII jaarg., no. 10, blz. 661-667, 1 fig.
[In Dutch, with summary in English. *L. hemidoxa* injurious to *Piper nigrum*].

VERCIER, M., et J. Le fraisier (Encyclopédie des connaissances agricoles). Paris, Libraire Hachette, 1933, 176 p., 50 fig. Bibliographie, p. 173.
[The contents include :— Chapitre VII. Maladies et ennemis (p. 94-103, fig. 24-36)].

VILLEDIEU, G. Cuivre et mildiou. *Le Progrès Agricole et Viticole*, Montpellier, 1933, 50e année, nº 23, p. 548-551.
[*Plasmopara viticola*].

VINAS, JEAN. Les agents de mouillage et leur emploi en agriculture. *Le Progrès Agricole et Viticole*, Montpellier, 1933, 50e année, nº 24, p. 574-578.

VOGLINO, PIERO. Il controllo fitopatologico sulla esportazione delle castagne dal Piemonte verso gli Stati Uniti d'America nella campagna 1932-33. *Nuovi Annali dell'Agricoltura*, Roma, 1933, anno XIII, n. 1-2, pp. 113-123.

VOLKART, A. Untersuchungen über den Ackerbau und die Ackerunkräuter im Gebirge. *Landwirtschaftliches Jahrbuch der Schweiz*, Bern 1933, 47. Jahrg., Heft 1, S. 77-138, Fig. 1-4. Literaturverzeichnis, S. 133-134.
[With summary in French and Italian].

VON TUBEUF. Studien über Symbiose und Disposition für Parasitenbefall sowie über Vererbung pathologischer Eigenschaften unserer Holzpflanzen. III. Untersuchungen über Zuwachsgang, Wassergehalt, Holzqualität, Erkrankung und Entwertung geharzter Fichten. *Zeitschrift für Pflanzenkrankheiten (Pflanzenpathologie) und Pflanzenschutz*, Stuttgart 1933, 43. Bd., Heft 7, S. 369-417, Abb. 1-11.

WARDLAW, C. W. Panama disease. A review of the occurrence of Panama disease on the Cavendish or Dwarf banana in the Canary Islands. *Tropical Agriculture*, Trinidad, B. W. I., 1933, Vol. X, No. 6, pp. 151-154.
[*Fusarium oxysporum cubense*].

WHITFIELD, F. G. SAREL. The bionomics and control of *Dysdercus* (Hemiptera) in the Sudan. *Bulletin of Entomological Research*, London, 1933, Vol. XXIV, Pt. 2, pp. 301-313, figs. 1-3, pls. VII-X. References, p. 313.
[*D. superstitiosus, D. fasciatus, D. nigrofasciatus, D. cardinalis*].

WICHMANN, HEINRICH E. *Blastophagus minor* Hartg. Die Grundlinien seiner Bekämpfung. *Wiener Allgemeine Forst- und Jagd-Zeitung*, Wien 1933, 51. Jahrg., Nr. 25, S. 129-130; Nr. 27, S. 139-140.

ZALESKI, KAROL. Względna odporność na *bakterjoze obwódkowa* odmian fasol uprawianych w Polsce. (Studium metodyczno-doświadczalne). *Roczniki Nauk Rolniczych i Leśnych*, Poznań 1933, tom XXX, zeszyt 1, str. 38-116, tabl. I-IV. Literatura, str. 111-113.
[In Polish, with summary in English :— Relative varietal susceptibility of beans grown in Poland to halo-blight disease. — *Phytomonas medicaginis* var. *phaseolicola*].

Prof. ALESSANDRO BRIZI, *Segretario generale dell'Istituto, Direttore responsabile.*